

This code will calculate the required static pressure to move a fluid through the testing chamber.

fluid properties:

Fluid\$ = 'AIR_{HA}' *Fluid flowing through the chamber*

temp = 200 [F] *Temperature of the fluid in the chamber*

pressure = 14.7 [psia] *Inlet pressure of the fluid in the chamber*

density = ρ (AIR_{HA}, T = temp, P = pressure) *Density of the fluid in the chamber*

\dot{m} = V_{flow} · density *Mass flow rate of the fluid through the chamber*

velocity = $\frac{V_{\text{flow}}}{\text{cross}_{\text{section}}} \cdot \left| 0.016666667 \cdot \frac{\text{ft/sec}}{\text{ft/min}} \right|$ *Velocity of the fluid through the chamber*

Chamber Properties:

cross_{section} = $18 \cdot 32 \cdot \left| 0.006944444 \cdot \frac{\text{ft}^2}{\text{in}^2} \right|$ *Cross sectional area of the chamber entrance*

diameter = $\frac{0.5}{12}$ *Average gravel diameter*

Calling packed spheres to compute the pressure drop:

Call **PackedSpheres** (Fluid\$, \dot{m} , diameter, cross_{section}, length, temp, pressure : friction_{factor}, heat_{coefficient}, thermal_{units}, pressure_{drop})

Calculating the Reynolds Number:

Kinematic_{viscosity} = KinematicViscosity (AIR_{HA}, T = temp, P = pressure) · $\left| 0.000277778 \cdot \frac{\text{ft}^2/\text{sec}}{\text{ft}^2/\text{hr}} \right|$

Dh = $\frac{2 \cdot 18 \cdot 32}{18 + 32}$

RE = velocity · $\frac{\text{Dh}}{\text{Kinematic}_{\text{viscosity}}}$

SOLUTION

Unit Settings: Eng F psia mass deg

(Length = 78", Run 300)

cross_{section} = 4 [ft²]

Dh = 23.04

Fluid\$ = 'AIR_HA'

heat_{coefficient} = 3.073 [Btu/hr-ft²-R]

length = 6.5 [ft]

pressure = 14.7 [psia]

RE = 19884 [dim]

density = 0.06014 [lbm/ft³]

diameter = 0.04167 [ft]

friction_{factor} = 2.059 [dim]

Kinematic_{viscosity} = 0.0002414 [ft²/sec]

\dot{m} = 3.007 [lbm/min]

pressure_{drop} = 29.63 [psia]

temp = 200 [F]

thermal_{units} = 171.7 [dim]

velocity = 0.2083 [ft/sec]

 $V_{\text{flow}} = 50 \text{ [ft}^3/\text{min]}$

No unit problems were detected.

Parametric Table: Length = 78"

	pressure [psia]	temp [F]	length [ft]	V_{flow} [ft ³ /min]	velocity [ft/sec]	RE [dim]	heat _{coefficient} [Btu/hr-ft ² -R]	pressure _{drop} [psia]
Run 1	14.7	200	6.5	1	0.004167	397.7	0.1987	0.02618
Run 2	14.7	200	6.5	1.164	0.004849	462.8	0.221	0.0354
Run 3	14.7	200	6.5	1.328	0.005532	528	0.2423	0.04597
Run 4	14.7	200	6.5	1.492	0.006215	593.2	0.2629	0.0579
Run 5	14.7	200	6.5	1.656	0.006898	658.4	0.2828	0.07118
Run 6	14.7	200	6.5	1.819	0.007581	723.5	0.3021	0.08579
Run 7	14.7	200	6.5	1.983	0.008264	788.7	0.3209	0.1017
Run 8	14.7	200	6.5	2.147	0.008946	853.9	0.3393	0.119
Run 9	14.7	200	6.5	2.311	0.009629	919	0.3572	0.1376
Run 10	14.7	200	6.5	2.475	0.01031	984.2	0.3747	0.1574
Run 11	14.7	200	6.5	2.639	0.01099	1049	0.392	0.1786
Run 12	14.7	200	6.5	2.803	0.01168	1115	0.4088	0.2011
Run 13	14.7	200	6.5	2.967	0.01236	1180	0.4254	0.2248
Run 14	14.7	200	6.5	3.13	0.01304	1245	0.4417	0.2498
Run 15	14.7	200	6.5	3.294	0.01373	1310	0.4578	0.2761
Run 16	14.7	200	6.5	3.458	0.01441	1375	0.4736	0.3036
Run 17	14.7	200	6.5	3.622	0.01509	1440	0.4892	0.3323
Run 18	14.7	200	6.5	3.786	0.01577	1506	0.5046	0.3623
Run 19	14.7	200	6.5	3.95	0.01646	1571	0.5198	0.3936
Run 20	14.7	200	6.5	4.114	0.01714	1636	0.5348	0.426
Run 21	14.7	200	6.5	4.278	0.01782	1701	0.5496	0.4596
Run 22	14.7	200	6.5	4.441	0.01851	1766	0.5643	0.4945
Run 23	14.7	200	6.5	4.605	0.01919	1831	0.5788	0.5305
Run 24	14.7	200	6.5	4.769	0.01987	1897	0.5931	0.5677
Run 25	14.7	200	6.5	4.933	0.02055	1962	0.6073	0.6061
Run 26	14.7	200	6.5	5.097	0.02124	2027	0.6214	0.6457
Run 27	14.7	200	6.5	5.261	0.02192	2092	0.6353	0.6864
Run 28	14.7	200	6.5	5.425	0.0226	2157	0.6491	0.7283
Run 29	14.7	200	6.5	5.589	0.02329	2222	0.6628	0.7713
Run 30	14.7	200	6.5	5.753	0.02397	2288	0.6763	0.8154
Run 31	14.7	200	6.5	5.916	0.02465	2353	0.6897	0.8607
Run 32	14.7	200	6.5	6.08	0.02533	2418	0.7031	0.907
Run 33	14.7	200	6.5	6.244	0.02602	2483	0.7163	0.9545
Run 34	14.7	200	6.5	6.408	0.0267	2548	0.7294	1.003
Run 35	14.7	200	6.5	6.572	0.02738	2613	0.7424	1.053
Run 36	14.7	200	6.5	6.736	0.02807	2679	0.7553	1.104
Run 37	14.7	200	6.5	6.9	0.02875	2744	0.7681	1.155
Run 38	14.7	200	6.5	7.064	0.02943	2809	0.7808	1.208
Run 39	14.7	200	6.5	7.227	0.03011	2874	0.7935	1.262
Run 40	14.7	200	6.5	7.391	0.0308	2939	0.806	1.317
Run 41	14.7	200	6.5	7.555	0.03148	3004	0.8185	1.373
Run 42	14.7	200	6.5	7.719	0.03216	3070	0.8309	1.43
Run 43	14.7	200	6.5	7.883	0.03285	3135	0.8432	1.488

Parametric Table: Length = 78"

	pressure [psia]	temp [F]	length [ft]	V _{flow} [ft ³ /min]	velocity [ft/sec]	RE [dim]	heat _{coefficient} [Btu/hr-ft ² -R]	pressure _{drop} [psia]
Run 44	14.7	200	6.5	8.047	0.03353	3200	0.8554	1.547
Run 45	14.7	200	6.5	8.211	0.03421	3265	0.8676	1.607
Run 46	14.7	200	6.5	8.375	0.03489	3330	0.8797	1.669
Run 47	14.7	200	6.5	8.538	0.03558	3396	0.8917	1.731
Run 48	14.7	200	6.5	8.702	0.03626	3461	0.9036	1.794
Run 49	14.7	200	6.5	8.866	0.03694	3526	0.9155	1.858
Run 50	14.7	200	6.5	9.03	0.03763	3591	0.9273	1.923
Run 51	14.7	200	6.5	9.194	0.03831	3656	0.9391	1.989
Run 52	14.7	200	6.5	9.358	0.03899	3721	0.9508	2.055
Run 53	14.7	200	6.5	9.522	0.03967	3787	0.9624	2.123
Run 54	14.7	200	6.5	9.686	0.04036	3852	0.9739	2.192
Run 55	14.7	200	6.5	9.849	0.04104	3917	0.9855	2.262
Run 56	14.7	200	6.5	10.01	0.04172	3982	0.9969	2.332
Run 57	14.7	200	6.5	10.18	0.04241	4047	1.008	2.404
Run 58	14.7	200	6.5	10.34	0.04309	4112	1.02	2.476
Run 59	14.7	200	6.5	10.51	0.04377	4178	1.031	2.549
Run 60	14.7	200	6.5	10.67	0.04445	4243	1.042	2.623
Run 61	14.7	200	6.5	10.83	0.04514	4308	1.053	2.698
Run 62	14.7	200	6.5	11	0.04582	4373	1.064	2.774
Run 63	14.7	200	6.5	11.16	0.0465	4438	1.076	2.851
Run 64	14.7	200	6.5	11.32	0.04719	4503	1.087	2.928
Run 65	14.7	200	6.5	11.49	0.04787	4569	1.098	3.007
Run 66	14.7	200	6.5	11.65	0.04855	4634	1.108	3.086
Run 67	14.7	200	6.5	11.82	0.04923	4699	1.119	3.166
Run 68	14.7	200	6.5	11.98	0.04992	4764	1.13	3.247
Run 69	14.7	200	6.5	12.14	0.0506	4829	1.141	3.328
Run 70	14.7	200	6.5	12.31	0.05128	4894	1.152	3.41
Run 71	14.7	200	6.5	12.47	0.05196	4960	1.162	3.494
Run 72	14.7	200	6.5	12.64	0.05265	5025	1.173	3.578
Run 73	14.7	200	6.5	12.8	0.05333	5090	1.184	3.662
Run 74	14.7	200	6.5	12.96	0.05401	5155	1.194	3.748
Run 75	14.7	200	6.5	13.13	0.0547	5220	1.205	3.834
Run 76	14.7	200	6.5	13.29	0.05538	5285	1.215	3.921
Run 77	14.7	200	6.5	13.45	0.05606	5351	1.226	4.009
Run 78	14.7	200	6.5	13.62	0.05674	5416	1.236	4.097
Run 79	14.7	200	6.5	13.78	0.05743	5481	1.247	4.186
Run 80	14.7	200	6.5	13.95	0.05811	5546	1.257	4.276
Run 81	14.7	200	6.5	14.11	0.05879	5611	1.267	4.366
Run 82	14.7	200	6.5	14.27	0.05948	5676	1.278	4.457
Run 83	14.7	200	6.5	14.44	0.06016	5742	1.288	4.549
Run 84	14.7	200	6.5	14.6	0.06084	5807	1.298	4.642
Run 85	14.7	200	6.5	14.77	0.06152	5872	1.308	4.735
Run 86	14.7	200	6.5	14.93	0.06221	5937	1.319	4.829
Run 87	14.7	200	6.5	15.09	0.06289	6002	1.329	4.923
Run 88	14.7	200	6.5	15.26	0.06357	6068	1.339	5.018
Run 89	14.7	200	6.5	15.42	0.06426	6133	1.349	5.114
Run 90	14.7	200	6.5	15.59	0.06494	6198	1.359	5.211
Run 91	14.7	200	6.5	15.75	0.06562	6263	1.369	5.308
Run 92	14.7	200	6.5	15.91	0.0663	6328	1.379	5.405

Parametric Table: Length = 78"

	pressure [psia]	temp [F]	length [ft]	V _{flow} [ft ³ /min]	velocity [ft/sec]	RE [dim]	heat _{coefficient} [Btu/hr-ft ² -R]	pressure _{drop} [psia]
Run 93	14.7	200	6.5	16.08	0.06699	6393	1.389	5.503
Run 94	14.7	200	6.5	16.24	0.06767	6459	1.399	5.602
Run 95	14.7	200	6.5	16.4	0.06835	6524	1.408	5.701
Run 96	14.7	200	6.5	16.57	0.06904	6589	1.418	5.801
Run 97	14.7	200	6.5	16.73	0.06972	6654	1.428	5.902
Run 98	14.7	200	6.5	16.9	0.0704	6719	1.438	6.003
Run 99	14.7	200	6.5	17.06	0.07108	6784	1.448	6.104
Run 100	14.7	200	6.5	17.22	0.07177	6850	1.457	6.206
Run 101	14.7	200	6.5	17.39	0.07245	6915	1.467	6.309
Run 102	14.7	200	6.5	17.55	0.07313	6980	1.477	6.412
Run 103	14.7	200	6.5	17.72	0.07382	7045	1.486	6.516
Run 104	14.7	200	6.5	17.88	0.0745	7110	1.496	6.62
Run 105	14.7	200	6.5	18.04	0.07518	7175	1.505	6.724
Run 106	14.7	200	6.5	18.21	0.07586	7241	1.515	6.829
Run 107	14.7	200	6.5	18.37	0.07655	7306	1.525	6.935
Run 108	14.7	200	6.5	18.54	0.07723	7371	1.534	7.041
Run 109	14.7	200	6.5	18.7	0.07791	7436	1.544	7.147
Run 110	14.7	200	6.5	18.86	0.0786	7501	1.553	7.254
Run 111	14.7	200	6.5	19.03	0.07928	7566	1.562	7.362
Run 112	14.7	200	6.5	19.19	0.07996	7632	1.572	7.469
Run 113	14.7	200	6.5	19.35	0.08064	7697	1.581	7.578
Run 114	14.7	200	6.5	19.52	0.08133	7762	1.591	7.686
Run 115	14.7	200	6.5	19.68	0.08201	7827	1.6	7.795
Run 116	14.7	200	6.5	19.85	0.08269	7892	1.609	7.905
Run 117	14.7	200	6.5	20.01	0.08338	7957	1.619	8.014
Run 118	14.7	200	6.5	20.17	0.08406	8023	1.628	8.125
Run 119	14.7	200	6.5	20.34	0.08474	8088	1.637	8.235
Run 120	14.7	200	6.5	20.5	0.08542	8153	1.646	8.346
Run 121	14.7	200	6.5	20.67	0.08611	8218	1.655	8.457
Run 122	14.7	200	6.5	20.83	0.08679	8283	1.665	8.569
Run 123	14.7	200	6.5	20.99	0.08747	8348	1.674	8.681
Run 124	14.7	200	6.5	21.16	0.08815	8414	1.683	8.793
Run 125	14.7	200	6.5	21.32	0.08884	8479	1.692	8.906
Run 126	14.7	200	6.5	21.48	0.08952	8544	1.701	9.019
Run 127	14.7	200	6.5	21.65	0.0902	8609	1.71	9.132
Run 128	14.7	200	6.5	21.81	0.09089	8674	1.719	9.245
Run 129	14.7	200	6.5	21.98	0.09157	8739	1.728	9.359
Run 130	14.7	200	6.5	22.14	0.09225	8805	1.737	9.473
Run 131	14.7	200	6.5	22.3	0.09293	8870	1.746	9.587
Run 132	14.7	200	6.5	22.47	0.09362	8935	1.755	9.702
Run 133	14.7	200	6.5	22.63	0.0943	9000	1.764	9.817
Run 134	14.7	200	6.5	22.8	0.09498	9065	1.773	9.932
Run 135	14.7	200	6.5	22.96	0.09567	9131	1.782	10.05
Run 136	14.7	200	6.5	23.12	0.09635	9196	1.791	10.16
Run 137	14.7	200	6.5	23.29	0.09703	9261	1.8	10.28
Run 138	14.7	200	6.5	23.45	0.09771	9326	1.809	10.39
Run 139	14.7	200	6.5	23.62	0.0984	9391	1.818	10.51
Run 140	14.7	200	6.5	23.78	0.09908	9456	1.826	10.63
Run 141	14.7	200	6.5	23.94	0.09976	9522	1.835	10.74

Parametric Table: Length = 78"

	pressure [psia]	temp [F]	length [ft]	V _{flow} [ft ³ /min]	velocity [ft/sec]	RE [dim]	heat _{coefficient} [Btu/hr-ft ² -R]	pressure _{drop} [psia]
Run 142	14.7	200	6.5	24.11	0.1004	9587	1.844	10.86
Run 143	14.7	200	6.5	24.27	0.1011	9652	1.853	10.98
Run 144	14.7	200	6.5	24.43	0.1018	9717	1.861	11.09
Run 145	14.7	200	6.5	24.6	0.1025	9782	1.87	11.21
Run 146	14.7	200	6.5	24.76	0.1032	9847	1.879	11.33
Run 147	14.7	200	6.5	24.93	0.1039	9913	1.888	11.45
Run 148	14.7	200	6.5	25.09	0.1045	9978	1.896	11.56
Run 149	14.7	200	6.5	25.25	0.1052	10043	1.905	11.68
Run 150	14.7	200	6.5	25.42	0.1059	10108	1.914	11.8
Run 151	14.7	200	6.5	25.58	0.1066	10173	1.922	11.92
Run 152	14.7	200	6.5	25.75	0.1073	10238	1.931	12.03
Run 153	14.7	200	6.5	25.91	0.108	10304	1.939	12.15
Run 154	14.7	200	6.5	26.07	0.1086	10369	1.948	12.27
Run 155	14.7	200	6.5	26.24	0.1093	10434	1.957	12.39
Run 156	14.7	200	6.5	26.4	0.11	10499	1.965	12.51
Run 157	14.7	200	6.5	26.57	0.1107	10564	1.974	12.62
Run 158	14.7	200	6.5	26.73	0.1114	10629	1.982	12.74
Run 159	14.7	200	6.5	26.89	0.1121	10695	1.991	12.86
Run 160	14.7	200	6.5	27.06	0.1127	10760	1.999	12.98
Run 161	14.7	200	6.5	27.22	0.1134	10825	2.008	13.1
Run 162	14.7	200	6.5	27.38	0.1141	10890	2.016	13.22
Run 163	14.7	200	6.5	27.55	0.1148	10955	2.024	13.33
Run 164	14.7	200	6.5	27.71	0.1155	11020	2.033	13.45
Run 165	14.7	200	6.5	27.88	0.1162	11086	2.041	13.57
Run 166	14.7	200	6.5	28.04	0.1168	11151	2.05	13.69
Run 167	14.7	200	6.5	28.2	0.1175	11216	2.058	13.81
Run 168	14.7	200	6.5	28.37	0.1182	11281	2.066	13.93
Run 169	14.7	200	6.5	28.53	0.1189	11346	2.075	14.04
Run 170	14.7	200	6.5	28.7	0.1196	11411	2.083	14.16
Run 171	14.7	200	6.5	28.86	0.1202	11477	2.091	14.28
Run 172	14.7	200	6.5	29.02	0.1209	11542	2.1	14.4
Run 173	14.7	200	6.5	29.19	0.1216	11607	2.108	14.52
Run 174	14.7	200	6.5	29.35	0.1223	11672	2.116	14.63
Run 175	14.7	200	6.5	29.52	0.123	11737	2.125	14.75
Run 176	14.7	200	6.5	29.68	0.1237	11803	2.133	14.87
Run 177	14.7	200	6.5	29.84	0.1243	11868	2.141	14.99
Run 178	14.7	200	6.5	30.01	0.125	11933	2.149	15.1
Run 179	14.7	200	6.5	30.17	0.1257	11998	2.158	15.22
Run 180	14.7	200	6.5	30.33	0.1264	12063	2.166	15.34
Run 181	14.7	200	6.5	30.5	0.1271	12128	2.174	15.45
Run 182	14.7	200	6.5	30.66	0.1278	12194	2.182	15.57
Run 183	14.7	200	6.5	30.83	0.1284	12259	2.19	15.69
Run 184	14.7	200	6.5	30.99	0.1291	12324	2.198	15.8
Run 185	14.7	200	6.5	31.15	0.1298	12389	2.207	15.92
Run 186	14.7	200	6.5	31.32	0.1305	12454	2.215	16.03
Run 187	14.7	200	6.5	31.48	0.1312	12519	2.223	16.15
Run 188	14.7	200	6.5	31.65	0.1319	12585	2.231	16.27
Run 189	14.7	200	6.5	31.81	0.1325	12650	2.239	16.38
Run 190	14.7	200	6.5	31.97	0.1332	12715	2.247	16.5

Parametric Table: Length = 78"

	pressure	temp	length	V _{flow}	velocity	RE	heat _{coefficient}	pressure _{drop}
	[psia]	[F]	[ft]	[ft ³ /min]	[ft/sec]	[dim]	[Btu/hr-ft ² -R]	[psia]
Run 191	14.7	200	6.5	32.14	0.1339	12780	2.255	16.61
Run 192	14.7	200	6.5	32.3	0.1346	12845	2.263	16.72
Run 193	14.7	200	6.5	32.46	0.1353	12910	2.271	16.84
Run 194	14.7	200	6.5	32.63	0.136	12976	2.279	16.95
Run 195	14.7	200	6.5	32.79	0.1366	13041	2.287	17.07
Run 196	14.7	200	6.5	32.96	0.1373	13106	2.295	17.18
Run 197	14.7	200	6.5	33.12	0.138	13171	2.303	17.29
Run 198	14.7	200	6.5	33.28	0.1387	13236	2.311	17.4
Run 199	14.7	200	6.5	33.45	0.1394	13301	2.319	17.52
Run 200	14.7	200	6.5	33.61	0.1401	13367	2.327	17.63
Run 201	14.7	200	6.5	33.78	0.1407	13432	2.335	17.74
Run 202	14.7	200	6.5	33.94	0.1414	13497	2.343	17.85
Run 203	14.7	200	6.5	34.1	0.1421	13562	2.351	17.96
Run 204	14.7	200	6.5	34.27	0.1428	13627	2.359	18.07
Run 205	14.7	200	6.5	34.43	0.1435	13692	2.367	18.18
Run 206	14.7	200	6.5	34.6	0.1441	13758	2.374	18.29
Run 207	14.7	200	6.5	34.76	0.1448	13823	2.382	18.4
Run 208	14.7	200	6.5	34.92	0.1455	13888	2.39	18.51
Run 209	14.7	200	6.5	35.09	0.1462	13953	2.398	18.62
Run 210	14.7	200	6.5	35.25	0.1469	14018	2.406	18.73
Run 211	14.7	200	6.5	35.41	0.1476	14083	2.414	18.84
Run 212	14.7	200	6.5	35.58	0.1482	14149	2.421	18.94
Run 213	14.7	200	6.5	35.74	0.1489	14214	2.429	19.05
Run 214	14.7	200	6.5	35.91	0.1496	14279	2.437	19.16
Run 215	14.7	200	6.5	36.07	0.1503	14344	2.445	19.26
Run 216	14.7	200	6.5	36.23	0.151	14409	2.453	19.37
Run 217	14.7	200	6.5	36.4	0.1517	14474	2.46	19.47
Run 218	14.7	200	6.5	36.56	0.1523	14540	2.468	19.58
Run 219	14.7	200	6.5	36.73	0.153	14605	2.476	19.68
Run 220	14.7	200	6.5	36.89	0.1537	14670	2.484	19.79
Run 221	14.7	200	6.5	37.05	0.1544	14735	2.491	19.89
Run 222	14.7	200	6.5	37.22	0.1551	14800	2.499	19.99
Run 223	14.7	200	6.5	37.38	0.1558	14866	2.507	20.1
Run 224	14.7	200	6.5	37.55	0.1564	14931	2.514	20.2
Run 225	14.7	200	6.5	37.71	0.1571	14996	2.522	20.3
Run 226	14.7	200	6.5	37.87	0.1578	15061	2.53	20.4
Run 227	14.7	200	6.5	38.04	0.1585	15126	2.537	20.5
Run 228	14.7	200	6.5	38.2	0.1592	15191	2.545	20.6
Run 229	14.7	200	6.5	38.36	0.1599	15257	2.553	20.7
Run 230	14.7	200	6.5	38.53	0.1605	15322	2.56	20.8
Run 231	14.7	200	6.5	38.69	0.1612	15387	2.568	20.89
Run 232	14.7	200	6.5	38.86	0.1619	15452	2.576	20.99
Run 233	14.7	200	6.5	39.02	0.1626	15517	2.583	21.09
Run 234	14.7	200	6.5	39.18	0.1633	15582	2.591	21.18
Run 235	14.7	200	6.5	39.35	0.1639	15648	2.598	21.28
Run 236	14.7	200	6.5	39.51	0.1646	15713	2.606	21.37
Run 237	14.7	200	6.5	39.68	0.1653	15778	2.613	21.47
Run 238	14.7	200	6.5	39.84	0.166	15843	2.621	21.56
Run 239	14.7	200	6.5	40	0.1667	15908	2.629	21.65

Parametric Table: Length = 78"

	pressure [psia]	temp [F]	length [ft]	V _{flow} [ft ³ /min]	velocity [ft/sec]	RE [dim]	heat _{coefficient} [Btu/hr-ft ² -R]	pressure _{drop} [psia]
Run 240	14.7	200	6.5	40.17	0.1674	15973	2.636	21.74
Run 241	14.7	200	6.5	40.33	0.168	16039	2.644	21.84
Run 242	14.7	200	6.5	40.49	0.1687	16104	2.651	21.93
Run 243	14.7	200	6.5	40.66	0.1694	16169	2.659	22.02
Run 244	14.7	200	6.5	40.82	0.1701	16234	2.666	22.11
Run 245	14.7	200	6.5	40.99	0.1708	16299	2.674	22.21
Run 246	14.7	200	6.5	41.15	0.1715	16364	2.681	22.35
Run 247	14.7	200	6.5	41.31	0.1721	16430	2.689	22.48
Run 248	14.7	200	6.5	41.48	0.1728	16495	2.696	22.62
Run 249	14.7	200	6.5	41.64	0.1735	16560	2.703	22.75
Run 250	14.7	200	6.5	41.81	0.1742	16625	2.711	22.89
Run 251	14.7	200	6.5	41.97	0.1749	16690	2.718	23.03
Run 252	14.7	200	6.5	42.13	0.1756	16755	2.726	23.16
Run 253	14.7	200	6.5	42.3	0.1762	16821	2.733	23.3
Run 254	14.7	200	6.5	42.46	0.1769	16886	2.741	23.43
Run 255	14.7	200	6.5	42.63	0.1776	16951	2.748	23.57
Run 256	14.7	200	6.5	42.79	0.1783	17016	2.755	23.71
Run 257	14.7	200	6.5	42.95	0.179	17081	2.763	23.84
Run 258	14.7	200	6.5	43.12	0.1797	17146	2.77	23.98
Run 259	14.7	200	6.5	43.28	0.1803	17212	2.778	24.11
Run 260	14.7	200	6.5	43.44	0.181	17277	2.785	24.25
Run 261	14.7	200	6.5	43.61	0.1817	17342	2.792	24.39
Run 262	14.7	200	6.5	43.77	0.1824	17407	2.8	24.52
Run 263	14.7	200	6.5	43.94	0.1831	17472	2.807	24.66
Run 264	14.7	200	6.5	44.1	0.1838	17538	2.814	24.79
Run 265	14.7	200	6.5	44.26	0.1844	17603	2.822	24.93
Run 266	14.7	200	6.5	44.43	0.1851	17668	2.829	25.06
Run 267	14.7	200	6.5	44.59	0.1858	17733	2.836	25.2
Run 268	14.7	200	6.5	44.76	0.1865	17798	2.843	25.34
Run 269	14.7	200	6.5	44.92	0.1872	17863	2.851	25.47
Run 270	14.7	200	6.5	45.08	0.1878	17929	2.858	25.61
Run 271	14.7	200	6.5	45.25	0.1885	17994	2.865	25.74
Run 272	14.7	200	6.5	45.41	0.1892	18059	2.873	25.88
Run 273	14.7	200	6.5	45.58	0.1899	18124	2.88	26.01
Run 274	14.7	200	6.5	45.74	0.1906	18189	2.887	26.15
Run 275	14.7	200	6.5	45.9	0.1913	18254	2.894	26.28
Run 276	14.7	200	6.5	46.07	0.1919	18320	2.901	26.42
Run 277	14.7	200	6.5	46.23	0.1926	18385	2.909	26.55
Run 278	14.7	200	6.5	46.39	0.1933	18450	2.916	26.69
Run 279	14.7	200	6.5	46.56	0.194	18515	2.923	26.82
Run 280	14.7	200	6.5	46.72	0.1947	18580	2.93	26.96
Run 281	14.7	200	6.5	46.89	0.1954	18645	2.938	27.09
Run 282	14.7	200	6.5	47.05	0.196	18711	2.945	27.23
Run 283	14.7	200	6.5	47.21	0.1967	18776	2.952	27.36
Run 284	14.7	200	6.5	47.38	0.1974	18841	2.959	27.5
Run 285	14.7	200	6.5	47.54	0.1981	18906	2.966	27.63
Run 286	14.7	200	6.5	47.71	0.1988	18971	2.973	27.77
Run 287	14.7	200	6.5	47.87	0.1995	19036	2.98	27.9
Run 288	14.7	200	6.5	48.03	0.2001	19102	2.988	28.03

Parametric Table: Length = 78"

	pressure [psia]	temp [F]	length [ft]	V _{flow} [ft ³ /min]	velocity [ft/sec]	RE [dim]	heat _{coefficient} [Btu/hr-ft ² -R]	pressure _{drop} [psia]
Run 289	14.7	200	6.5	48.2	0.2008	19167	2.995	28.17
Run 290	14.7	200	6.5	48.36	0.2015	19232	3.002	28.3
Run 291	14.7	200	6.5	48.53	0.2022	19297	3.009	28.44
Run 292	14.7	200	6.5	48.69	0.2029	19362	3.016	28.57
Run 293	14.7	200	6.5	48.85	0.2036	19427	3.023	28.7
Run 294	14.7	200	6.5	49.02	0.2042	19493	3.03	28.83
Run 295	14.7	200	6.5	49.18	0.2049	19558	3.037	28.97
Run 296	14.7	200	6.5	49.34	0.2056	19623	3.044	29.1
Run 297	14.7	200	6.5	49.51	0.2063	19688	3.052	29.23
Run 298	14.7	200	6.5	49.67	0.207	19753	3.059	29.37
Run 299	14.7	200	6.5	49.84	0.2077	19818	3.066	29.5
Run 300	14.7	200	6.5	50	0.2083	19884	3.073	29.63



